CONSULTING ENGINEERS

ARTHUR K. PETERS

7020 N.W. 11TH PLACE
GAINESVILLE, FLORIDA 32605

RADIO
TELEVISION
CATV
COMMON CARRIER

(904) 331-0149
FAX: (904) 331-8026

MEMBER AFCCE

October 2, 1992

Ms. Donna Searcy, Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Dear Ms. Searcy:

Enclosed is an original and four copies of our Comments in response to the Commission's request for comments to Revision of Part 22 of the Commission's Rules governing the Public Mobile Services (CC Docket 92-115).

Should you have any questions concerning this, please do not hesitate to contact our office.

Sincerely yours,

Arthur K. Peters, P.E.

AKP:pjl
Enclosures

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	
	)	
Revision of Part 22 of the Commission's Rules governing the Public Mobile Services	)	CC Docket 92-115
	)	
	)	

To The Commission:

The firm of Arthur K. Peters, Consulting Engineers, respectfully submits comments to the Federal Communications Commission relating to its Notice of Proposed Rule Making (NPRM) CC Docket 92-115 relating to the revision of Part 22 of the Commission's Rules governing the Public Mobile Services.

The Notice of Proposed Rule Making discusses the principles behind several proposed procedural changes, attaches a complete rewrite of all Part 22 Rules and finally, proposes new forms to be used in making application or notification to the FCC. These comments are ordered in similar fashion and cross references are provided to paragraph numbers in the Discussion of the NPRM and/or paragraph numbers corresponding to the proposed revision of Part 22.

Applications to be granted on an "First Come-First Served basis" (¶ 9)

In an effort to eliminate the need for lotteries and expedite the application processing procedure, the NPRM proposes that applications only be subject to lottery procedures if they were mutually exclusive and filed on the same day. Following a 30-day Public Notice, applications would then be eligible for grant and the present 60-day window period for competing applications eliminated. Clearly, any procedure to reduce the time taken for authorizations to be granted by the FCC is of public benefit. The NPRM states that this move would also "...prevent applicants from filing applications simply to impede a competitor's applications." This statement has only limited validity and in order to be accurate, presupposes that the impeding application is filed after the impeded application. This is clearly true in the case of an existing system operator proposing additional facilities which will provide definite service and benefit to the public whose application is held hostage by a subsequently filed mutually exclusive application. This procedure, although not condoned by the FCC, is commonplace and enables, at the very least, one entity to delay the implementation of another entity's business plan. However, the proposed change brings with it the opportunity for other undesirable practices. Licensees of mobile radio systems grow their facilities in order to react to public needs and very often gain the finances for expansion from prior operation of existing facilities. The patterns of expansion are easily discernible and the area where future applications will propose facilities is predictable even to a casual observer. Under the proposed procedure, another entity, which might not always have the most altruistic intentions, can file an application which will effectively

impede the bona fide system operator's future expansion capabilities. The newly proposed single-day window eliminates any opportunity for the impeded operator to file any valid application of its own and leaves that system handicapped in its ability to expand to satisfy public needs. Alternatively, the handicapped system operator is left with no alternative but to negotiate from a position of weakness with the principal of the first-filed application. Clearly, changes proposed elsewhere to the FCC Rules would mean that the first applicant cannot benefit financially by selling its authorization when granted. However, it is an inescapable fact that the financial benefit in many of these cases is in inhibiting the business prospects of another entity rather than benefiting financially by selling an authorization.

We suggest that opportunity should still be given to operators (such as that described in the foregoing example) to file a valid, competing application. In order not to extend the application processing time, the time window during which that application may be filed could be limited to 30-days which would then coincide with the Public Notice window period during which Petitions to Deny can be filed as proposed in the NPRM. Clearly it is undesirable that any and every party has the opportunity to file during that 30-day window; therefore a criteria must be established which could be based upon applicants holding existing authorizations (both construction permits and licenses) or prior-filed applications for co-channel facilities within the same geographic area as those presently proposed. The definition of geographic area would be coincident with the usage proposed elsewhere in the NPRM.

Unfortunately, the adoption of such a suggestion would still require lottery procedures in certain instances. These could be minimized for frequencies which are allocated at the Commission's discretion (e.g., 931 MHz paging facilities) where the impasse can be avoided with the requested frequency awarded to the existing operator of the co-channel facility in the same geographic area.

In the NPRM, the Commission asks for a cost benefit analysis to determine whether or not the first come - first served procedure is of public benefit when compared to any alternative procedure. This firm doubts whether such an anslysis could be validated because of the number of variables which could arise in differing situations. Quantitative appraisal of inhibiting the expansion of a system which presently incorporates millions of dollars worth of equipment on a given channel as opposed to a single transmitter system would be difficult to envisage. A business operator seeking to avoid the impediment of another entity filing an application to frustrate his business expansion has only the option to establish more stations than he initially needs in order to safeguard his business expansion for the future. The cost of establishing such networks without supporting traffic and consequential revenues can only result in higher tariff rates to the public. Whereas it might be argued that competition could diminish that cost, it remains a fact that if every licensee adopts similar procedures of establishing sytems over a larger area than is currently required, the overall cost of service must increase. Clearly, even a procedure incorporating lottery selection is not ideal as it involves the element of chance rather than planning. However, at the very least it substitutes an equal chance into the proceedings unless full comparative hearings are to be routine in the administration of the radio service.

Conditional Grants (¶ 11)

The NPRM describes how the Commission proposes to place total reliance on the accuracy of application information and its compliance with relevant portions of the Commission's Rules. It describes the benefit to the public as being a significant reduction in application processing time. As a consequence of the adoption of this procedure, it proposes that authorizations would be conditional for the entire term of the license and that, "...if interference occurs because of an error or omission to the technical exhibits to the application, the Commission would retain the right to order the licensee, ...to suspend operation of the facilities at the locations causing interference..." It seems reasonable that, if the Commission no longer audits the quality of an application, this conditional aspect of a subsequent license is essential. However, it needs to be emphasized that only cases of interference will be considered if the application was defective at the time of filing according to contemporaneous rules and not as measured by standards at the time interference is discovered, at which time relevant rule changes might have been adopted.

We are extremely skeptical about the Commission's proposal to require an applicant to certify compliance with the technical aspects of the Commission's Rules. Rarely is the signator of a Form 401 technically qualified to make such a certification. Our comment invites the response that the signator should assure himself that the technical content of the application has been produced by a qualified entity. However, the fact remains that the responsibility for compliance with the technical aspects of the Commission's Rules lies with the entity who receives payment for preparing the technical portion of the application. This may

be an external consultant or a person in the employ of the applicant. In the latter case, clearly the applicant ultimately retains responsibility for the technical portion of the application. However, this responsibility is questionable if a consultant is employed. The point that we raise is this: If such a certification is to be included on the application, it should be signed by a person who at least claims to understand the technical content of the Commission's Rules. We therefore suggest that if such a certification is considered desirable, it be signed separately by the person responsible for completing the technical portion of the application and that this is most properly included on Schedule B of the application. The certification should also include the statement that the signator is familiar with the technical content of Part 22 of the Commission's Rules.

Adopt Spectrum Finder's Procedures (¶ 13)

This firm whole-heartedly supports the proposals set forward by the Commission in its NPRM. We would suggest that it would be helpful if the Commission in its adoption of this Rule gave examples of evidence of non-usage of a channel which is acceptable to support a "finders preference" application.

Replace the Carey method (¶ 15)

As consulting engineers we are comfortable with the present Carey method and the usage of it in determining interference-free operation. However, we are aware of minor discrepancies in results obtained by different parties

because of differing implementation procedures. Usually these differences are not significant. We neither support or protest the discontinuation of Carey methodology.

However, the proposal as it stands does result in an omission. Presently, if an applicant proposes a facility which will be subject to interference from previously authorized facilities, that applicant must express its acceptance of the interference. Many applications prepared under the existing Rules include an analysis to show the area within the proposed service area which will be interference-free. The Commission, in its present Rules, includes a definition of an interference-free area which is based upon Carey methodology. Basically, the area which is free of interference is that area where the ratio of wanted-to-interfering signals exceeds a stipulated minimum which is currently related to the Carey equations. Changes to the Rules whereby interference contours do not have a specified level removes the ability to calculate signal levels and, consequently, the ratio of signal levels.

In the NPRM, the Commission is placing greater emphasis on interference-free areas. For example, at proposed Rule 22.567(a)(1)(iii), it stipulates one of the criteria for grant of an application which is not totally interference-free as being "...the area and/or population to which service would be provided by the proposed transmitter is substantial, and service gained would exceed that lost as a result of agreements to accept interference." Whereas the Commission is proposing to remove Carey criteria, it is not substituting any method to define areas of interference-free operation even though it is placing criteria on the size of such an area. It is entirely possible for a proposed service area to be entirely encompassed by an interference contour and yet still provide a significant and

acceptable area of interference-free operation because of the actual ratio of wanted-to-interfering signals. It is therefore submitted that if the Commission adopts its policy of redefining service areas, it must also adopt a method of calculating predicted signal strengths at a given point from a transmitter or implement an entirely new definition to characterize interference-free operation.

Eliminate traffic loading studies (¶ 16)

Whereas this firm supports the contention that the provision of traffic loading studies is a burden on applicants, it is also aware of the tendency for certain entities to gather together as many channels as possible to satisfy future usage requirements whether they be real or imagined. The channels which have been subject to traffic loading study procedures are a valuable resource which is extremely attractive to many system operators because of the perceived propagation advantages, particularly over 931 MHz paging channels. We are concerned that the ability to file for channels in increments of two will allow channel hoarders to legitimately acquire multiple channels without any significant traffic on those channels which they have already built. As a compromise, we would suggest that applications only be allowed in increments of one channel for the same geographic area bearing in mind that the expected reduction in application processing time will also diminish the time needed to establish each channel before an additional one can be requested.

Eliminate notification requirements for minor changes and additional transmitters within contours of authorized stations (¶ 17)

The principle behind this proposal is extremely well-intentioned. A reduction of staff work load is always to be welcomed, particularly if it allows redirection of efforts to other more demanding and urgent requirements. However, we strongly oppose eradication of the requirement to maintain accurate station records at the Commission. Even with the present system, where so-called permissive actions are not recorded on Public Notice, it is not uncommon to receive a request from Commission staff for an interference study to be provided for a station which has been added by Form 489 notification. If the engineering data relating to that station is not available at the Commission, interference studies cannot be performed. However, under the new Rules, it is unlikely that such requests for additional interference studies will ever occur as the Commission intends to rely totally on the validity and accuracy of applications without auditing their content. We foresee a situation where significant numbers of facilities will be estabished by permissive action and no records filed at the Commission. This may seem innocuous, but the real danger exists when one or more of the stations upon which permissive actions relied are discontinued. It is essential that at that point filings are made for all the previous stations if future interference-free studies are to be accurately performed. We believe that such a procedure would rapidly result in unreliable data bases and utmost confusion. For these reasons, we strongly oppose the elimination of notification requirements and feel that all facilities should not only be notified to the Commission but appear on Public Notice as informative items.

Revise application and notification forms (¶ 18)

A revision of forms to remove superfluous items is always beneficial. However, certain of the items removed from Form 401 are considered by this firm to be essential and the individual items will be referred to later in this document.

COMMENTS ON INDIVIDUAL RULE PROPOSALS

§ 22.99 Definitions

Base Transmitter

It is suggested that this definition be expanded to include the words "or pagers" because the definition of mobile stations excludes pagers and these are clearly served by a base transmitter.

Fixed Transmitter

The proposed definition of "A stationary transmitter that communicates with other stationary transmitters" is technically incorrect as a transmitter can only communicate with a receiver. We suggest the definition be "A stationary transmitter that communicates with non-mobile stations."

Repeater

It seems that this term is being redefined with similar definition to that previously used for "relay". This will cause some confusion as the proposed rewrite of Form 401 still includes the term relay which would then be undefined.

We believe that there is still a need for the term repeater according to the definition in the existing Part 22 Rules. We therefore suggest that the term "Repeater" be defined as "a fixed station which automatically retransmits the mobile communications and/or transmitter information about the base station, along a fixed point-to-point link between the base station and the control station." And that the term "Relay" should be maintained in the new list of definitions with the definition "A fixed transmitter that retransmits the signals of other fixed stations." which is attributed to the modified "Repeater".

§ 22.115 Content of Applications

In Subsection (a)(2) headed Antenna Structure Drawing it is proposed that, under certain circumstances, an application should not be required to include an antenna structure drawing. If the antenna structure drawing has the sole purpose of demonstrating that a proposal has no impact on obstruction to aircraft, this would be reasonable. However, in these cases, the antenna would either be top-mounted and not exceed the height of existing antennas or side-mounted. In the latter cases, the characteristics of many antennas are affected by that structure. It is presently a requirement of the FCC Rules that the drawing not only show vertical dimensions depicting the position of an antenna but also a structural description of the mounting configuration of that antenna insofar as it may affect the radiation pattern of the antenna. It is our strong contention that such information is vital to ensure compliance with FCC Rules. Whereas some entities might contend that an antenna's omnidirectional pattern is unaffected by the tower because it is so far away from the tower (an argument which we would continuously refute) it is

irrefutably true that a so-called omnidirectional antenna will be significantly affected if it is placed close to a tower. If the mounting configuration is not recorded in the application, there is no reference data for FCC field inspectors or any other entity to confirm that the station has been constructed in a manner which will produce the operating parameters included in the specification. We strongly advocate the retention of vertical profile drawings with the inclusion of antenna mounting information in the case of side-mounted antennas whose radiation pattern is affected by the supporting structure.

§ 22.123 Classifications of Filings as Major or Minor

In the discussion of this specific rule, the NPRM seeks comment on "...whether there are circumstances under which a change in the location of a fixed transmitter or other changes to an existing fixed transmitter could properly be considered minor rather than major."

The introduction of permissive changes for all facilities defined by a contour (be it a signal level contour or a fixed diameter circle) has allowed flexibility for licensees to make changes in their systems. Some of these changes represent onward progression in system evolution while others respond to emergency situations such as unexpected loss of tower facilities by reason of disaster or unanticipated interference. Licensees and members of the Commission's staff have become increasingly aware of the lack of flexibility with respect to non-contour defined facilities with particular emphasis on control stations. Under the present Rules and Procedures, it is impossible to react quickly to unanticipated circumstances unless an STA action is applicable. In the case of control and

repeater facilities allocated by fixed distance separation methods, it is clearly unacceptable for a licensee to move that station at will because it may have an impact on applications presently being processed. Moreover, unless the data relating to the relocation is recorded by Public Notice, frequency searches will not reveal its accurate position and Commission data bases will not be current. Therefore, under current and proposed procedures, it seems unlikely that minor changes can be adopted with respect to fixed transmitter relocations.

To continue a system whereby rapid response is only possible via STA action is, in many circumstances, wasteful of the Commission's resources and therefore contrary to the implicit intent of this rulemaking. We therefore suggest the adoption of a new concessionary approach which would only be applicable to existing, licensed fixed transmitter installations (e.g., controls, repeaters and relays). It is not intended that the proposed process should be attractive to licensees and should only allow flexibility with the acceptance of a penalty. In the event that a licensed facility is to be relocated, it is anticipated that the regular major action application be filed for processing under the normal application cycle. Once the application has been filed with the FCC, the licensee would be permitted to relocate the facility to the location described in the now pending application with the following restrictions:

A. The new antenna height above mean sea level must be equal to or less than the previously authorized height;

B. The radiation pattern (including orientation) shall be identical to that previously authorized;

C. ERP shall be reduced and that reduction shall be a function of the distance of the relocation in accordance with the following formula:

$$\text{Power reduction (db)} = 10 \times \text{Log}_{10} D$$

Where: D represents the relocation distance in kilometres

D. The maximum relocation distance over which this procedure is allowed is limited to ten kilometres.

Only when the pending application for relocation is granted by the Commission (after appearance on Public Notice) may the licensee increase the power to that specified in the application and adopt any new radiation pattern or increases in antenna heights in accordance with the granted application. In the event that the application is validly returned as unacceptable for filing or dismissed then the station must continue at reduced power without the benefit of protection from other facilities. It is anticipated that operation of the facility at such restricted power level would result in a level of interfering signal to any other co-channel facility which would be less than that experienced if the originally authorized location had been maintained. This would certainly be true under line-of-sight conditions and under any reasonably anticipated changes in terrain profile between the two stations occurring as a result of the move. As a final safeguard, adoption of this method of operation would implicitly be a developmental authorization subject to required change in the event that unanticipated interference did occur.

The restricted power levels and lack of security inherent in this procedure are expected to deter its invocation in all but emergency circumstances. Given the

reduced regular application cycle time that the Commission is striving to obtain, it is expected that all other circumstances can be accomodated by existing major action applications.

§ 22.163 Minor Modifications to Existing Stations

The proposed Rule removes the need for notifying the Commission of minor changes (sometimes referred to as Permissive Changes). As was stated earlier in detail, we strongly oppose any action which results in incomplete station records existing at the Commission. It is our opinion that short-term benefits of cost reduction to the FCC in not having to provide labor for filing purposes and applicants who would no longer have to pay a filing fee is minimal in comparison with the chaos which would gradually mushroom if stations' files descended to a level of irrevelance. The Commission's duties of regulation and rule enforcement could not be executed in the absence of a database describing authorized facilities. In an environment where the Commission seeks to put increased responsibility on applicants to ensure interference-free operation with regard to protected facilities, it will be removing the means for applicants to successfully satisfy that duty.

In the event that the Commission cannot continue this important function of record keeping, we would propose that a non-governmental agency take over this function to ensure its integrity. This would be funded by redirecting a portion of license fees which would no longer be required by the Commission due to the consequential savings in manpower.

§ 22.313 Station Identification

The proposal allowing licensees to identify facilities licensed under multiple call signs by a transmitted single call sign is unequivocally supported.

§ 22.507 Number of Transmitters per Station

The proposed new Rule seeks to avoid inefficient use of the spectrum and discourage warehousing of channels. There are many reasons why a multi-frequency transmitter might be used by a licensee and some of those reasons are extremely valid. While traffic volume is low during a system's infancy, it is not unreasonable for a single piece of equipment to be shared between two channels if those two channels can be separately justified by need or eligibility. If channels are being allocated at a location where they are not justified then the requirement for discrete transmitters is not in and of itself a deterrent. For example, if an entity wishes to warehouse frequencies, it is entirely possible to equip each channel using low-cost dedicated transmitters which will fulfill minimal FCC requirements. This company is aware of valid engineering reasons why more than one channel has been satisfied using a single, quality transmitter. In some cases that transmitter can facilitate different licensee's channels under a cooperative agreement; in other cases it may satisfy the requirements of two channels associated with a single licensee. It is inevitably the case that as channels need discrete transmitters because of traffic loading, licensees will ensure that they are equipped with them in order to maximize profitability. If a problem exists with

multiple channels in locations where need cannot justify them, then the rules governing the allocation of additional channels are those rules which should be modified.

§ 22.535 Effective Radiated Power Limits

Subsection C of this Rule proposes a new height/power limit methodology. The basic rule requires that power be limited so that the average of the eight cardinal radial service distances does not exceed 32.2 kilometres (20 miles). It is suggested that this rule be clarified to include language clearly indicating whether or not radials which are excluded from average terrain calculations (such as those over foreign territory or sea water) are to be included or excluded from the calculation of the arithmetic mean value. We suggest that the mean be calculated using only cardinal radials where the service contour distance occurs entirely over land.

Furthermore, this Rule should not be applied to 931 MHz paging stations. The tabular nature of the 931 MHz Service Radii classification (proposed Table E-1) results in stations having an HAAT of 1001 feet being able to operate at 1000 Watts and those with an HAAT of 1002 feet being restricted to 250 Watts. Whereas the other paging frequencies (35 MHz, 43 MHz and 150 MHz) experience a gradually declining power limitation, 931 MHz would experience step limits of 6 dB at each breakpoint. We advocate the retention of the method set out in existing Rule 22.505(b) for use in imposing 931 MHz band height/power limits.

Proposed § 22.535 also includes a subparagraph (d) concerning Encompassed interfering contour areas. Basically this rule allows stations to operate at higher power limits if their interfering contour is "...totally encompassed by the interfering contours of operating co-channel base transmitters controlled by the same licensee. For the purpose of this paragraph operating transmitters are authorized transmitters that are providing service to the public."

The context of this rule is to allow transmitters being added to an existing system that comprises multiple overlapping interference contours to initiate an additional location which can operate at a higher power level so long as it is installed in such a way that the interference potential of the new station is less than or equal to that of the existing transmitters authorized under conventional height/power rules. This higher power limit can be permitted only because other operators' protected stations are not adversely impacted since they have been protected already in the authorization of the stations exhibiting the overlapping outer interference contours.

We see no reason for the stipulation that the overlapping existing contours belong to "authorized transmitters that are providing service to the public". We strongly advocate that any station which is authorized, whether it be licensed or the subject of a construction permit should qualify as an authorized interference contour in the context of this rule. A construction permit station and a licensed station have both protected other operators' systems. Consequently, any station which is now introduced which fits within their interference contour limitations should be acceptable. Under the proposed procedure it would be acceptable for an applicant who has established a number of stations to add a station exceeding the height/powers and then subsequently delete one of the stations on which the

new station depended in order to be eligible for the increased power. We see little difference between this scenario and one where an applicant installs an exempted height/power station when one of the interference contours on which it relies is that of a granted authorization which has not yet been built – even if it subsequently is not ever built.

For these reasons we strongly advocate that the co-channel base stations be characterized not as "operating" or "providing service to the public" but simply as authorized transmitters.

This recommendation concerning the encompassed interfering contour area rule applies equally to the similar paragraphs concerning one-way or two-way mobile operation (22.565 (d)).

§ 22.537 Technical Channel Assignment Criteria

This paragraph, in part, replaces paragraphs in the existing Rules associated with the protection of other stations from interference. Subparagraph (a) of this rule, entitled Contour Overlap, allows for the grant of any application if the interfering contour of the proposed station does not overlap the service contour of any other station. Nowhere in the proposed rules is any indication given that calculations shall include data (either height or power) in the direction of co-channel stations. The rule seems solely to consider cardinal radial station data. If this is the intention of this rule, this firm opposes the introduction of such a method in the strongest possible tones. There are many areas of the United States where terrain characteristics vary so dramatically that cardinal radial data alone cannot determine the presence or absence of interference. For example, if a

valley exists within the service area of a station and that valley does not run along any cardinal radial, it is clear that the interference potential in directions along that valley (where the terrain is significantly lower than the average) cannot be described by the interference potential on the eight cardinal radials. One example which comes readily to mind and with which many engineers will be familiar is that of the Shenandoah Valley. This valley, which is characterized by high mountains on either side of a flat plateau, follows an orientation of approximately N 30° E/N 210° E. As is well known, the principal cities lie along the bottom of the valley. Many transmitter sites exist on the mountains on either side of the valley and the interference potential which is greatest along that valley is completely overlooked by any cardinal radial. Consequently, under the proposed rule, legitimately authorized "non-interfering stations" will destroy communications over significant areas within what are supposed to be protected service contours. This unacceptable situation will be made even worse should the new application specify a directional antenna oriented to satisfy usage requirements so that the main power goes directly down the valley. Now a situation exists wherein the maximum power which occurs on a non-cardinal radial will be significantly understated by an elementary description based solely on the eight cardinal radials. We strongly advocate that interference contours, which will be the basis of the new interference-free protection showings, should be comprised of the eight cardinal radial data together with that data on radials to identified co-channel stations which are entitled to protection as defined elsewhere in the Rules. That data should include both height and power on each of the specified radials.

§ 22.539 Additional Channel Policies

In part, this Rule sets out considerations of overlap between existing, authorized stations and new proposals to be used in determining whether or not the proposed channel is an additional channel in the "same geographic area". The intent of the Rule is quite clear and acceptable. However, a definite inconsistency is seen between the way in which VHF paging channels and 931 MHz paging channels are treated.

Subpart (a) of this Rule entitled VHF Transmitters in the same area indicates that VHF channels shall be considered to be in the same geographic area if one of the transmitters is within the service area of the other transmitter or there is 50% or more overlap of the two service areas. It should be remembered that the previously described height/power limits introduce a token limit of 20 miles as the service radius. Consequently, a typical station operating at the maximum potential in flat terrain would produce a 20-mile circle service contour. Therefore it follows that a new VHF paging channel located 21 miles from the first transmitter would be outside the first station's service contour and not have a 50% overlap characteristic. As a result, the two channels would not be considered to be in the same geographic area and the existence of one would not affect the grant of the other.

Subparagraph (b) of the Rule dealing with 931 MHz Transmitters in the same area considers that stations are within the same geographic area if they are located within 40 miles of each other. With this amount of separation the 20-mile circles describing the 931 MHz service areas would not overlap whatsoever.

Consequently, the definitions of "same geographic area" require a far greater separation between 931 MHz transmitters than for VHF transmitters and consequently the 931 MHz version of the Rule is far more onerous than the VHF version.

The same inconsistency exists when a combination of VHF and 931 MHz channels are involved. The result is that if the proposal were adopted, an operator whose system is exclusively or predominantly comprised of VHF paging transmitters would find it easier to acquire additional channels than other operators. It is suggested that the distance figures specified in subpart (b) of the Rule and associated with 931 MHz transmitters should be halved so that the Rule refers to transmitters located "less than 32.2 kilometres (20 miles)" rather than the existing 64.4 kilometres (40 miles).

§ 22.559 One-way Paging Requirements

Subparagraph A entitled Interference Exhibit sets out the requirements for the exhibits required to demonstrate interference-free operation. Referring to our previous comments concerning Section 22.537 and co-channel station radial data, we recommend the inclusion of words in this Rule also requiring the use of data on radials towards protected co-channel stations.

The Rule also refers to extended searches to be made for additional protected stations in the event that the service contour exceeds 76.5 kilometres (47.5 miles). We would suggest the inclusion of a clarification sentence similar to

that in the existing Rules which clearly states that the stations to be identified should be searched for over a radial arc of ±22.5° of any cardinal radial on which the distance limit is exceeded.

§ 22.561 Channels for One-way or Two-way Mobile Operation

We would point out that the first sentence referring to "Public Land Mobile Service" would be made obsolete by the proposed rule changes and that this service should be referred to as the "Paging and Radiotelephone Service".

§ 22.563 Provision of Rural Radio Service upon Request

According to this paragraph, all channels listed under § 22.561 (loosely known as the two-way frequencies at present) would be subject to the requirement that rural radio service must be made available upon request. The existing rules only place this stipulation on a portion of these channels and it is questioned whether or not this is a mistake on the part of the authors of the rules. We would recommend that the same channels be subject to this requirement as were originally subject under the old rules.

Since the flexible usage proceeding, the channels mentioned in the proposed Section 22.561 may be allocated for one-way service as well as two-way mobile operation. We question whether or not it is reasonable to continue to

require stations using these frequencies which are authorized only for one-way service be required to provide rural radio service when the authorization granted for that station (and presumably the equipment used to construct this station) does not allow two-way service of any kind.

§ 22.567 Technical Channel Assignment Criteria

As with Rule 22.537, we strongly recommend that interference contours be characterized by co-channel radial data as well as cardinal radial data. With respect to Subparagraph (b) Protection for Fixed Receivers, the Commission seeks comment on methods of ensuring the protection of fixed receivers on mobile channels. Any adopted method would be introduced as Rule 22.56(b)(2). This firm has had significant involvement in this issue as it has clients operating systems using control transmitters on mobile frequencies. It has also spent time discussing this issue with members of the Commission's staff. Consequently, we understand the issues involved in this topic with great clarity. We affirm the notion that any existing two-way operation is entitled to expect that its base receivers are not subjected to unreasonable interference which would limit the service provided by that station. We also affirm that it is the responsibility of any licensee operating mobile frequency transmitters in a fixed configuration to operate them in a responsible manner and to take all steps in the design process to ensure that this interference does not occur and, having taken all those safe guards, be responsible for resolving interference if it should occur in practice. Our clients who have accepted these limitations have successfully operated control transmitters in conjunction with large paging systems serving large areas.